ABSTRACT

Catalysts and methods useful for the production of olefins from alkanes via oxidative dehydrogenation (ODH) comprise at least one base metal and copper with an optional promoter. The catalyst preferably comprises a base metal and a copper-modified Groups 8, 9, or 10 metal on a support comprising alumina, zirconia, or mixtures thereof. Copper is preferably present in an amount of from about 0.1 to about 1.0 percent by weight of the total catalyst weight. The base metal preferably comprises manganese, chromium, gold, their corresponding oxides, or combinations thereof. The optional promoter preferably comprises platinum, palladium, iridium, rhodium, ruthenium, or any combinations thereof.